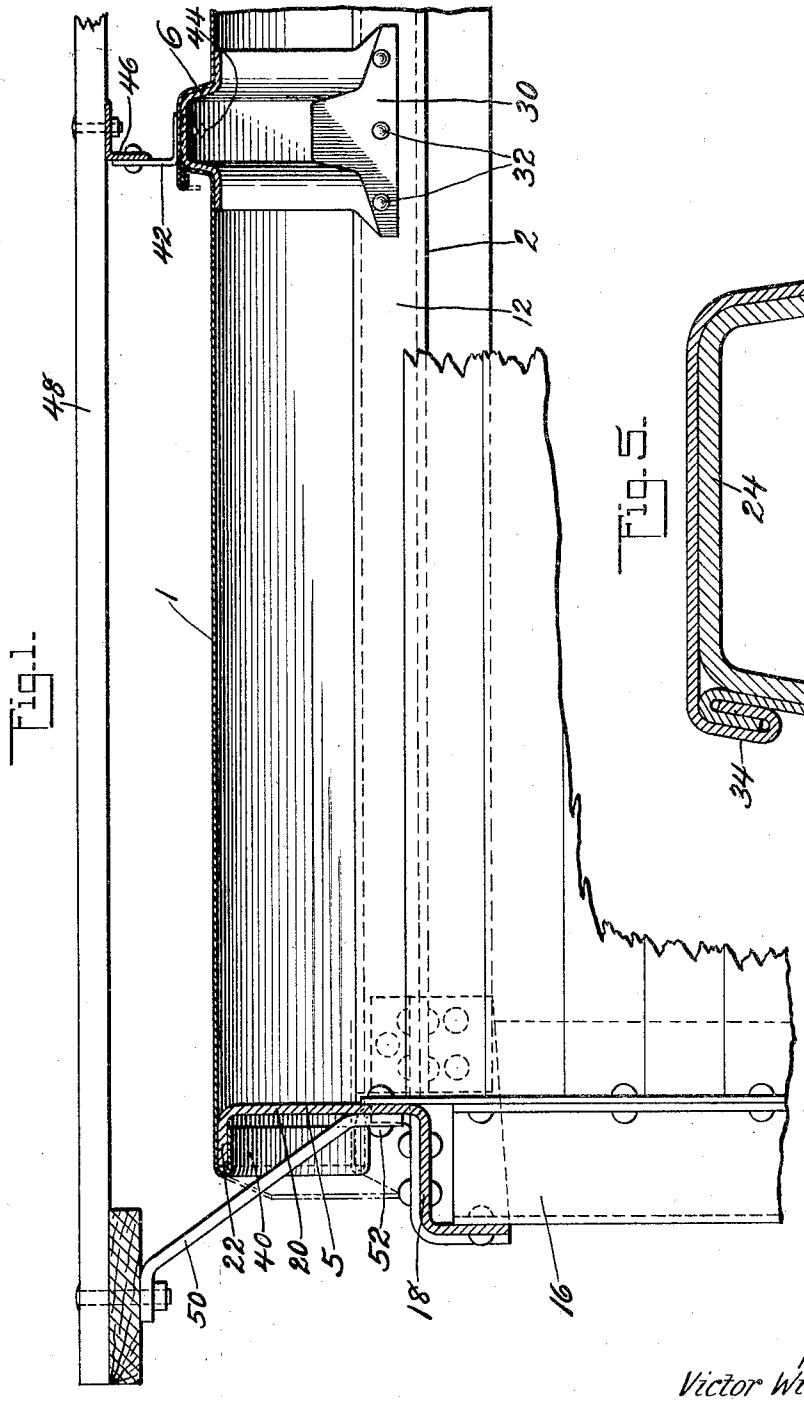
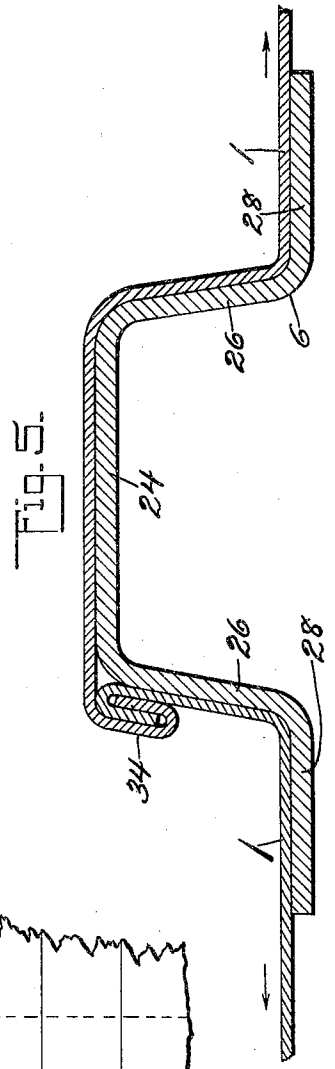
April 10, 1928. 1,665,392

V. WILLOUGHBY

CAR ROOF

Filed Sept. 17, 1925 2 Sheets-Sheet 1





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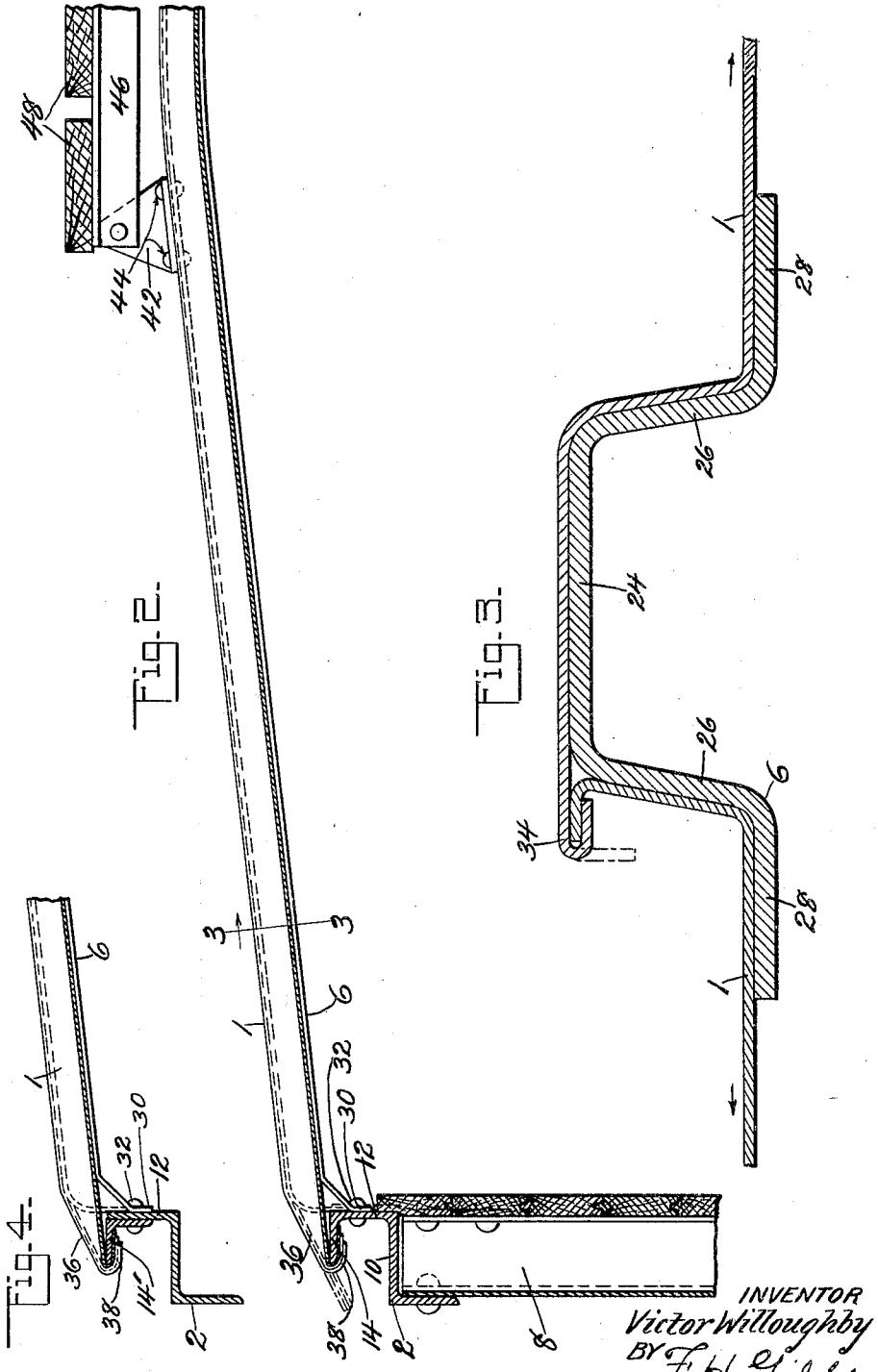
Filed Sept. 17, 1925 2 Sheets-Sheet 2



Patented Apr. 10, 1928. 1,665,392

UNITED STATES PATENT OFFICE.

VICTOR WILLOUGHBY, OF RIDGEWOOD, NEW JERSEY, ASSIGNOR TO AMERICAN CAR AND FOUNDRY COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

CAR ROOF.

Application filed September 17, 1925. Serial No. 56,991.

This invention relates to car roofs, and especially roofs of substantially all-metal construction, or in which metal roof sheets receive their support (within the area bounded by the car ends and sides) solely from the carlines or the like. It is an object of this invention to provide an improved roof construction in which the edges of the roof sheets are engaged with flanges on the end and side plates to secure the roof sheets in position. It is also an object of this invention to provide a car roof in which the roof sheets are joined at the carlines and are shaped to fit the carlines so that the carlines serve to anchor the roof sheets as well as to support them. It is also an object of this invention to so secure the roof sheets to the carlines and side and end plates that a flexible roof is provided.

The accompanying drawings illustrate the preferred form of the invention, though it is to be understood that the invention is not limited to the exact details of construction shown and described, as it is obvious that various modifications thereof within the scope of the claims will occur to persons skilled in the art.

In said drawings:

Fig. 1 is a central vertical longitudinal section of one end of a car roof constructed in accordance with this invention;

Fig. 2 is a partial vertical transverse section of the roof shown in Fig. 1;

Fig. 3 is a section through a carline taken on the line 3—3 of Fig. 2;

Fig. 4 is a fragmentary view similar to Fig. 2 showing a modified construction of the side plate, and

Fig. 5 is a view similar to Fig. 3 showing a modified construction.

As shown in the drawings, the roof comprises roof sheets 1 which extend between the side plates 2 and are bent to conform to the slope of the roof. The roof sheets are supported at the car ends upon end plates 5 and intermediate the car ends upon carlines 6, the end plates and carlines also extending between the side plates 2 and being shaped to conform to the slope of the roof. The side plates 2 are supported on the posts 8 and comprise Z-shape members having their webs 10 horizontal and their upwardly projecting flanges 12 provided with outwardly projecting flanges 14, at the upper edges of the side plates. As shown in Fig. 4, the outwardly projecting flanges 14 may be formed of angles 14′ secured to the vertical flanges 12 instead of being formed integral with the flanges 12 as in Fig. 2.

The end plates 5 are supported upon posts 16 and are formed of pressed members having horizontal webs 18 and upwardly projecting vertical flanges 20 which increase in depth toward the center of the car to conform to the slope of the car roof. The vertical flanges 20 are provided with outwardly projecting flanges 22, at the upper edges of the end plates. The carlines 6 are of inverted channel-shape having the horizontal webs 24 and the downwardly projecting sides 26, the sides 26 being provided at their lower edges with outwardly projecting flanges 28. At their ends the carlines 6 are flattened and bent downwardly to form the ends 30 which are secured to the flanges 12 of the side plates 2 by the rivets 32.

The roof sheets 1 are joined by seams 34 which extend adjacent and parallel to the carlines 6 and which may, as shown in Fig. 3, be left projecting outwardly or, as shown in Fig. 5, be bent downwardly. Adjacent the seams 34 the sheets 1 are bent to fit the carline, one sheet being bent to engage with the web 24 and one side 26 and its flange 28, while the adjacent roof sheet is bent to engage with the other side 26 and its flange 28. At the ends of the carlines the channels formed in the roof sheets decrease in depth gradually, as at 36, and the edges of the sheets are bent to engage beneath the flanges 14 of the side plates, as shown at 38. At the ends of the cars the roof sheets are bent as at 40, to engage the flanges 22 of the end plates 5. To the carlines 6 brackets 42 are secured by rivets 44, the brackets serving to carry the running board saddles 46 which support the running board 48, the ends of the running board being supported by brackets 50 secured to the end plates 5 by rivets 52.

It will be noted that except for the rivets which secure the brackets 42 to the carlines 6 the only means used to secure the roof sheets 1 to the carlines 6, side plates 2 and end plates 5 are the bending of the edges of the sheets about the flanges of the side and end plates and the fitting of the roof sheets to the carlines. It will also be noted that fitting the roof sheets to the carlines causes the sheets to be supported by the web 24 and

the flanges 28 of the carlines and to be interlocked with the carlines so as to prevent movement of the sheets longitudinally of the car. The roof sheets are supported solely by the side and end plates and the carlines, and are effectually held in place by their engagement with them as aforesaid, without necessity for any other securing means. Hence the construction as a whole is a light, simple, flexible, and inexpensive one, and when all metal (as here shown), absolutely fireproof.

What is claimed is—

1. In a roof for railway cars, inverted carlines having a web portion, sides and outwardly extending flanges, a plate resting upon one of said flanges and extending over the adjacent side and said web with the end thereof extended beyond said web, a second plate resting upon the other flange and extending along the side of the web adjacent said other flange, the ends of said two plates being seamed with the seam folded to lie substantially parallel with one side of said carlines.

2. In a roof for railway cars, inverted carlines having a web portion, sides and outwardly extending flanges, a plate resting upon one of said flanges and extending over the adjacent side and said web with the end thereof extended beyond said web, a second plate resting upon the other flange and extending along the side of the web adjacent said other flange, the ends of said two plates being seamed with the seam folded to lie substantially parallel with one side of said carlines in such a manner as to define a space between the juncture of the two plates and the adjacent edge of the carlines.

3. In a car having inverted channel shaped carlines, a roof therefor comprising plates resting on the flanges of and closely engaging the sides and web of said carlines and connected together with a seam folded to lie adjacent one side of the carline and to define a space adjacent one edge of the web of the latter.

In witness whereof I have hereunto set my hand.

VICTOR WILLOUGHBY.